

PCG-GRZ610/GRZ630/GRZ660

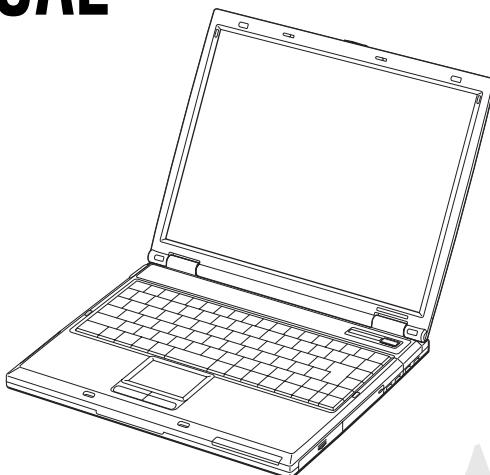
SERVICE MANUAL

For American Area
US Model
Canadian Model

Ver 3-2004B

Revision History

Lineup : PCG-GRZ660
PCG-GRZ630
PCG-GRZ610



Illust : PCG-GRZ660



- Design and specifications are subject to change without notice.

NOTEBOOK COMPUTER

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Caution Markings for Lithium/Ion Battery - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.

Dispose of used battery promptly.

Keep away from children.

CAUTION: Changing the back up battery.

- Overcharging, short circuiting, reverse charging, multilatation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.

Service and Inspection Precautions

1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the Δ mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

**LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE Δ SUR LES
DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT
CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE
REEMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY
DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU
DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.**

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TABLE OF CONTENTS

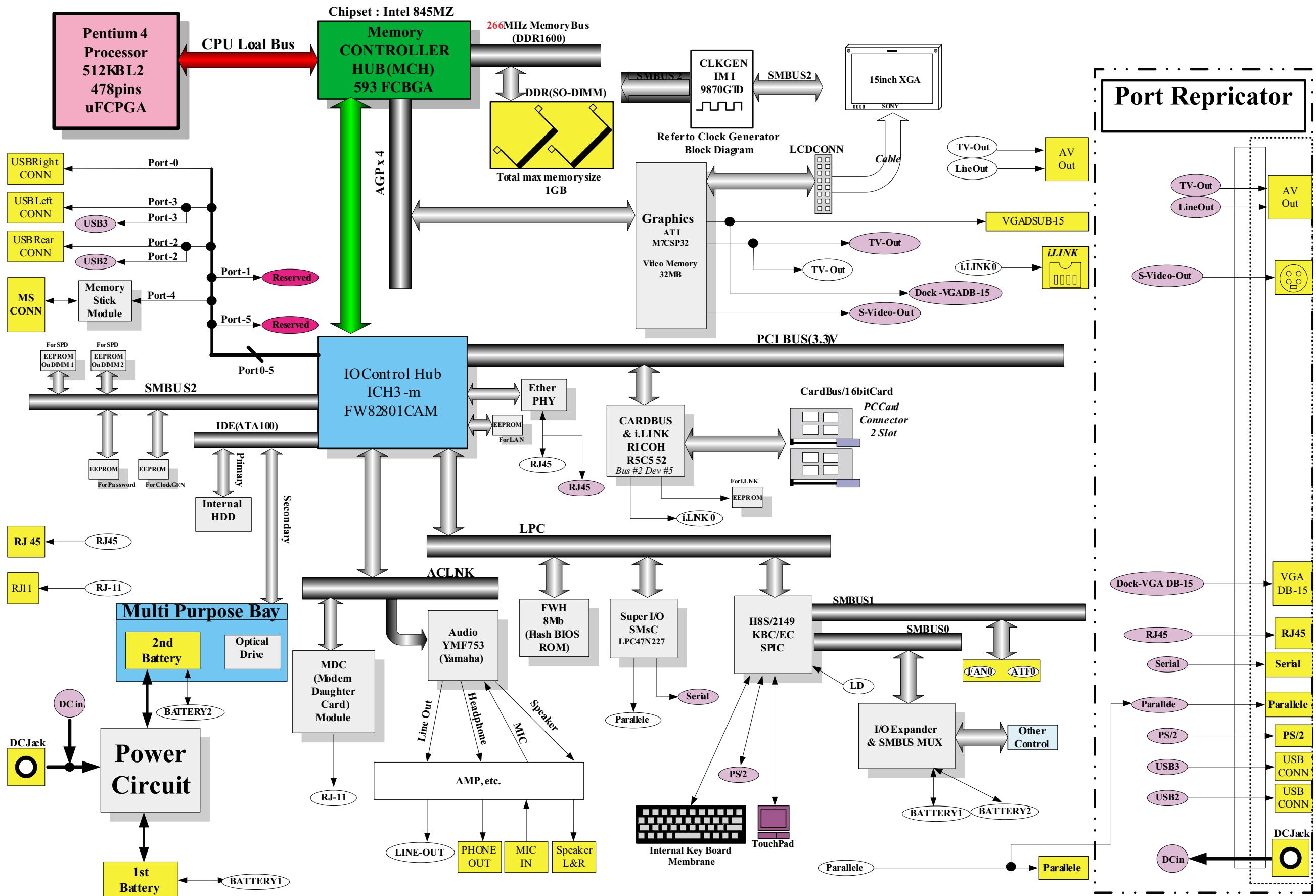
<u>Section</u>	<u>Title</u>	<u>Page</u>
CHAPTER 1. BLOCK DIAGRAM	1-1 (to 1-2)
CHAPTER 2. FRAME HARNESS DIAGRAM	2-1 (to 2-2)
CHAPTER 3. EXPLODED VIEWS AND PARTS LIST	3-1 3-1. Main Section 3-2 3-2. LCD Section – Made by HI – 3-5 3-3. Connector Section (CH Type Only) 3-7 (to 3-8)
CHAPTER 4. OTHERS	4-1 4-1. Replacing the CPU 4-1 1. Removing the CPU 4-1 2. Installing the CPU 4-1 (to 4-1)

History of the changes is shown as the
“Revision History” at the end of this data.

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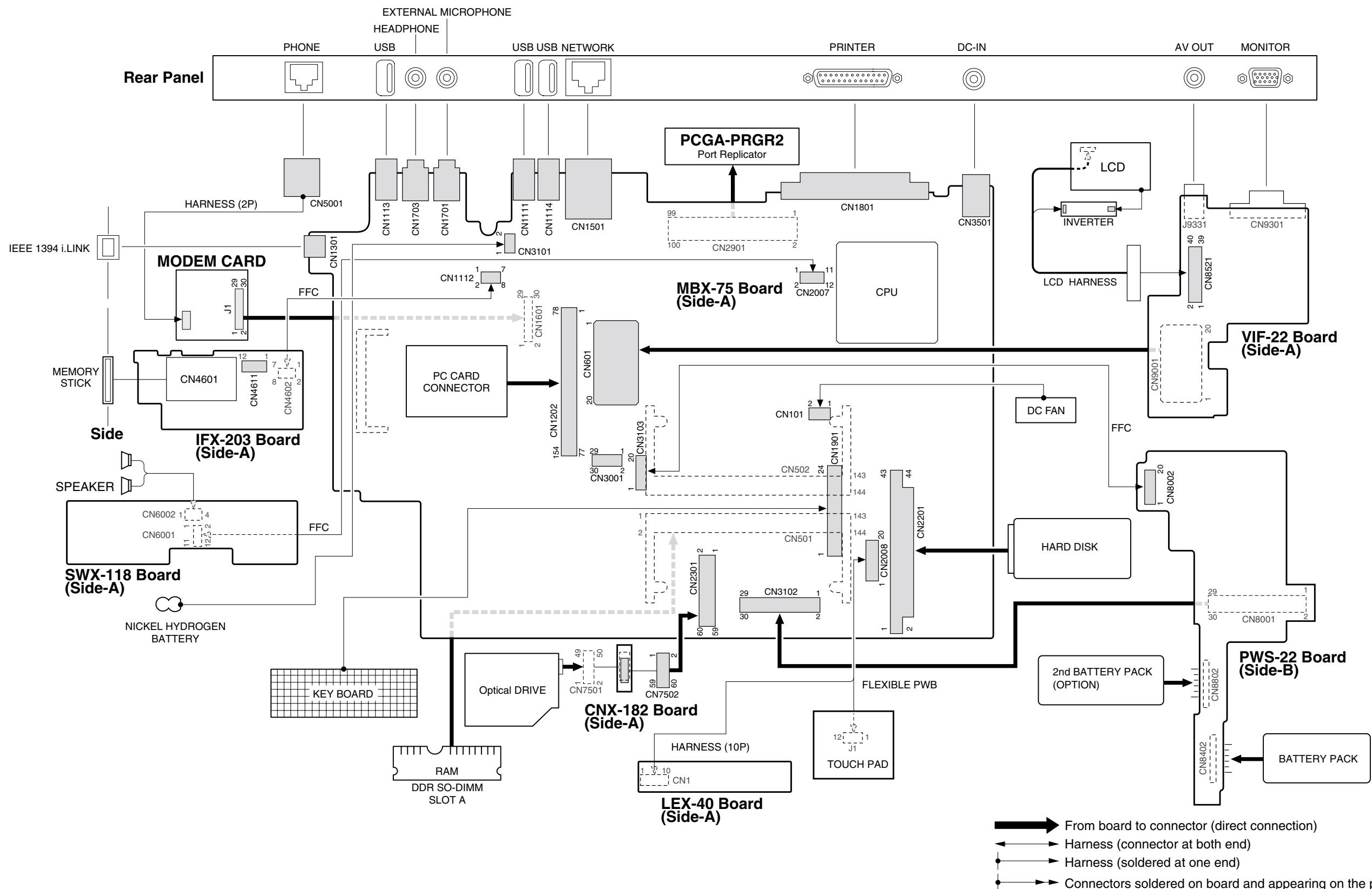
CHAPTER 1.

BLOCK DIAGRAM



CHAPTER 2.

FRAME HARNESS DIAGRAM



CHAPTER 3.

EXPLODED VIEWS AND PARTS LIST

NOTE:

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- When two or more parts are shown in parallel, use the part described first as the main part.
- The parts marked “\$” are the High Value Modules.
- The parts marked “#” are the parts on which barcode label is attached.
- The indication [CH] is used for identification of part type.
- Regarding the boards of this model, the discrete parts on the boards cannot be replaced. However, Some connectors can be replaced.

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

【使用上の注意】

- *印の部品は常備在庫しておりません。
- 図面番号のない部品は供給しません。
- 併記部品の場合、上部記載部品をメイン部品として使用してください。
- 部品名称の前に\$印のついた部品は、High Value Moduleです。
- 商品名称の前に#印のついた部品は、バーコードラベル貼付部品です。
- [CH]の表記は部品管理上の識別です。
- 本モデルの基板については、基板上の各部品の修理は行うことができません。ただし、一部のコネクタについては、修理可能です。

\triangle 印の部品、または \triangle 印付きの点線で囲まれた部品は、安全性を維持するために重要な部品です。従って交換時は、必ず指定の部品を使用してください。

How to Use Parts Differently.

This series of product uses the two different types of optical drive (So type and Pa type).

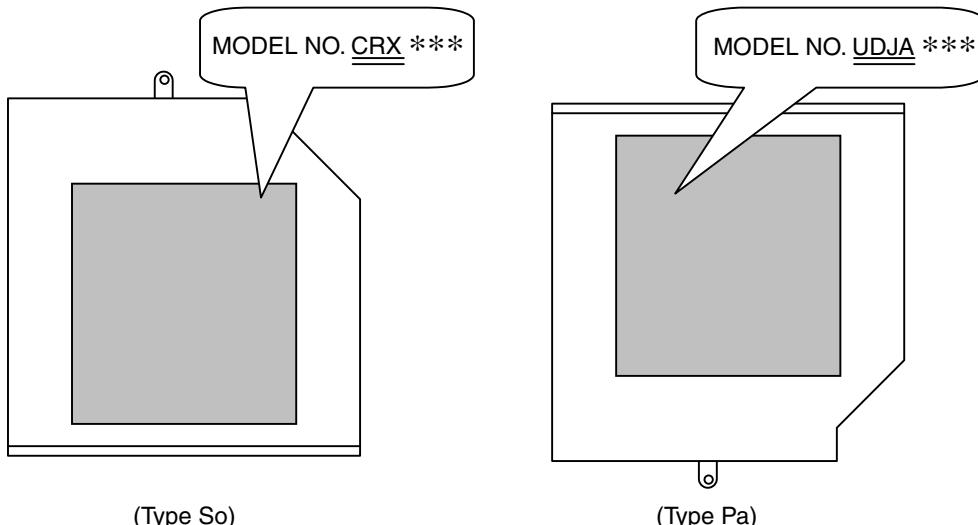
When replacing the optical drive, use the So type parts for the So type optical drive, and use the Pa type parts for the Pa type optical drive.

Replace the peripheral parts of optical drive with the same type in the same way.

[Applicable Model]

GRZ610/GRZ630 Model

[How to identify the So and Pa types of parts]



[Example of showing in repair part list]

Ref. No.	Part No.	Description
----------	----------	-------------

999	8-458-896-70	\$ # RW DRIVE CRX820E-V2 (So)
999	1-796-594-11	\$ # COMBO DRIVE (UJDA740) (Pa)

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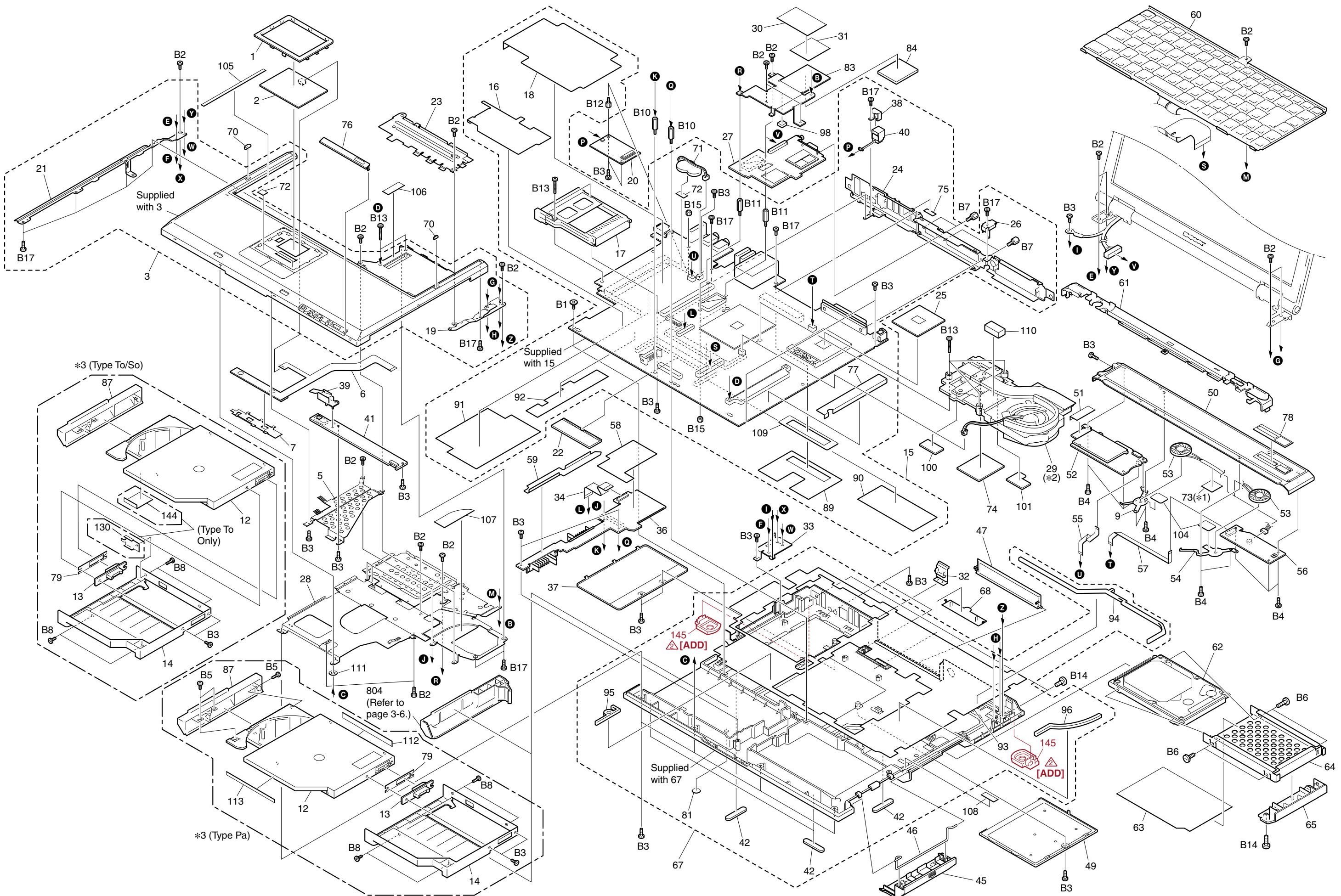
3-1. Main Section

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	4-667-050-01	ESCUSHION TP	64	4-653-799-11	[CH]...BRACKET HDD
2	1-796-166-21	PAD, TOUCH	65	X-4625-233-1	ASSY DOOR HDD
3	X-4625-676-1	HOUSING (PALM REST) (NJ) ASSY	67	X-4625-847-1	HOUSING BOTTOM ASSY
* 5	4-667-062-01	PLATE GND	68	4-654-379-12	COVER (PORT)
6	1-688-138-11	GT2 T/P FPC	70	4-668-288-01	CUSHION PALM
7	4-653-795-01	[CH]...BUTTON HOLDER	71	1-756-038-11	BATTERY, NICKEL HYDROGEN
9	4-667-037-01	SPEAKER HOLDER L	72	4-642-711-11	[CH]...SHEET (BATTERY), ADHESIVE
12	1-796-594-11 \$ #	(GRZ610/GRZ630)...	73		CAPTON TAPE (W19X20) (*1)
12	8-458-896-71 \$ #	COMBO DRIVE (UJDA740) (Pa)	74	4-671-241-01	SHEET THERMAL (STH)
		(GRZ610/GRZ630)...	75	4-668-310-01	GASKET (LAN)
12	1-796-506-11 \$ #	RW DRIVE CRX820E-V2 (So)	76	4-671-083-01	COVER (B), LENS
		(GRZ660) ... W-DVD (SD-R6012) (To)	77	4-668-305-01	SHEET HDD
13	A-8067-582-A \$	COMPLETE PWB CNX-182	78	4-668-313-01	ICON SHEET
14	4-667-033-01	(GRZ610/GRZ630) ... CASE BAY	79	4-654-837-01	SHEET BAY BOARD
14	4-667-033-02	(GRZ660) ... CASE BAY	81	4-654-380-31	[CH]...CAP BAY
15	A-8067-873-A \$ #	COMPLETE PWB MBX-75 (GT2+)	83	X-4625-306-1	PLATE HEATSINK ASSY
16	4-668-304-01	SHEET DRIVE	84	4-668-300-01	SHEET ATI
17	1-815-594-41	CONNECTOR PC CARD (EJECT RIGHT)	87	X-4625-685-1	(GRZ610/GRZ630) ...
18	4-655-960-11	[CH]...SHEET PC CARD			BEZEL COMBOX24 (PA) ASSY (Pa)
* 19	4-667-068-01	BRACKET PALMREST R	87	X-4625-684-1	(GRZ610/GRZ630) ...
20	1-761-606-12 #	CARD, MODEM	87	X-4625-686-1	BEZEL COMBOX24 (CN) ASSY (So)
* 21	4-667-067-01	BRACKET PALMREST L			(GRZ660) ...
22	6-600-116-01	IC M470L3224DT0-CB0	89	4-668-306-01	BEZEL DVD-RW (TO) ASSY (To)
22	6-600-167-01	(DDR266 SO-DIMM 256MB)	90	4-668-307-01	SHEET PORT
		IC MT8VDDT3264HDG-25B3	91	4-668-308-01	SHEET DIMM
23	X-4625-305-1	(DDR266 SO-DIMM 256MB)	92	4-668-312-01	SHEET MINI PCI
24	X-4625-501-1	BRACKET KEYBOARD ASSY	93	4-668-297-01	SHEET DIMM SIDE
25	6-703-633-01	BLACKET IO ASSY			INSULATOR MB SHIELDING
		(GRZ630/GRZ660) ...	94	4-668-295-01	FAN INLET SPONGE1
		IC RK80532PC056512SL6GS	95	4-668-296-01	FAN INLET SPONGE2
		(P4-M 2.4GHz)	96	4-669-868-01	FAN INLET SPONGE 3
25	6-704-126-01	(GRZ610) ...	98	4-670-462-01	THEMAL SHEET (PLATE HEATSINK)
		IC RK80532PC041512SL6S7	100	4-671-609-01	GT+ MOS PAD R
26	4-654-119-01	(P4-M 2.0GHz)			
27	A-8067-872-A \$	[CH]...PLATE DC	101	4-671-610-01	GT+ MOS PAD L
28	X-4625-238-1	COMPLE PWB VIF-22	104	4-671-208-01	SHEET SPEAKER R
29	A-8112-576-A \$	ASSY SHIELDING PALMREST	105	4-671-203-01	SHEET SHIELDING PALMREST
		STH HEAT SINK ASSY (*2)	106	4-671-204-01	SHEET KB1
			107	4-671-205-01	SHEET KB2
30	4-670-461-01	SHEET BLIND (PLATE HEATSINK)	108	4-671-206-01	SHEET HOUSING BOTTOM
31	4-670-396-01	SHEET COPPER (PLATE HEATSINK)	109	4-671-207-01	BOARD DOCKING
32	4-653-761-01	[CH]...CAP ETHERNET	110	4-671-608-01	GT+ GASKET HEATSINK
33	4-667-060-01	BRACKET ILINK	111	4-673-315-01	GT2 WASHER
34	1-824-997-11	FFC (20P)	112	4-670-047-01	(GRZ610/GRZ630) ...
36	A-8067-874-A \$	COMPLETE PWB PWS-22 (GT2+)			TAPE COPPER (PA1) (Pa)
37	X-4625-234-1	ASSY (DOOR MDC)	113	4-670-048-01	
38	4-667-066-01	BRACKET PHONE			(GRZ610/GRZ630) ...
39	X-4625-239-1	ASSY LATCH DETECTOR	130	4-655-927-03	TAPE COPPER (PA2) (Pa)
40	9-885-028-60	HARNESS, 2PIN	144	4-669-412-01	(GRZ660) ... SPRING (DVD-ROM) (To)
41	A-8067-585-A \$	COMPLETE PWB LEX-40	145	4-667-051-01	(GRZ660) ... CU SHEET DVD-RW (To)
42	4-668-294-01	FOOT FRONT			FOOT REAR ————— [ADD]
45	4-667-052-01	DOOR BATTERY	B1	4-654-387-01	SCREW (MBX)
46	4-668-299-01	DOOR BATTERY SPRING	B2	4-641-726-41	SCREW (M2), SPECIAL HEAD
47	X-4625-307-1	DOOR IO ASSY	B3	4-669-867-01	SCREW(M2X4), SPECIAL HEAD
49	X-4625-790-1	ASSY DOOR DIMM COPPER	B4	4-639-112-01	SCREW M2X4
50	X-4625-683-1	ASSY (HOOD) (KEYBOARD)	B5	4-645-177-01	(GRZ610/GRZ630) ...
51	4-671-590-01	SHEET (MS) (C)			SCREW (M1.7X3.5) (Pa)
52	A-8067-852-A \$	COMPLETE PWB IFX-203 (GT2)	B6	4-635-301-01	SCREW M3X4
53	1-529-878-31	SPEAKER (2.8CM)	B7	4-635-966-01	SCREW (HEX)
54	4-667-038-01	SPEAKER HOLDER R	B8	4-656-703-01	SCREW M2
55	1-823-099-11	CABLE, FLEXIBLE FLAT	B10	4-654-386-01	SPACER (PWS)
56	A-8067-574-A \$	COMPLETE PWB SWX-118	B11	4-654-385-01	SPACER (VIF)
57	1-827-082-11	FFC 12PIN (120)	B12	4-661-107-01	STAND OFF M2X5
58	4-668-301-01	SHEET PWS1	B13	4-644-899-01	SCREW (M2), 0 NUMBER P3 KIND
59	4-668-302-01	SHEET PWS2	B14	4-654-811-01	SCREW M3
60	1-477-580-21 \$ #	KEY BOARD UNIT (US)	B15	7-622-205-05	NUT (M2 TYPE2), HEXAGON
61	4-667-074-01	BASE DISPLAY	B17	4-641-726-81	SCREW (M2), SPECIAL HEAD
62	A-8113-859-A \$ #	ASSY HDD 40GB(H) (S)			
63	4-653-801-11	[CH]...SHEET HDD			

*1 Use the CAPTON TAPE.

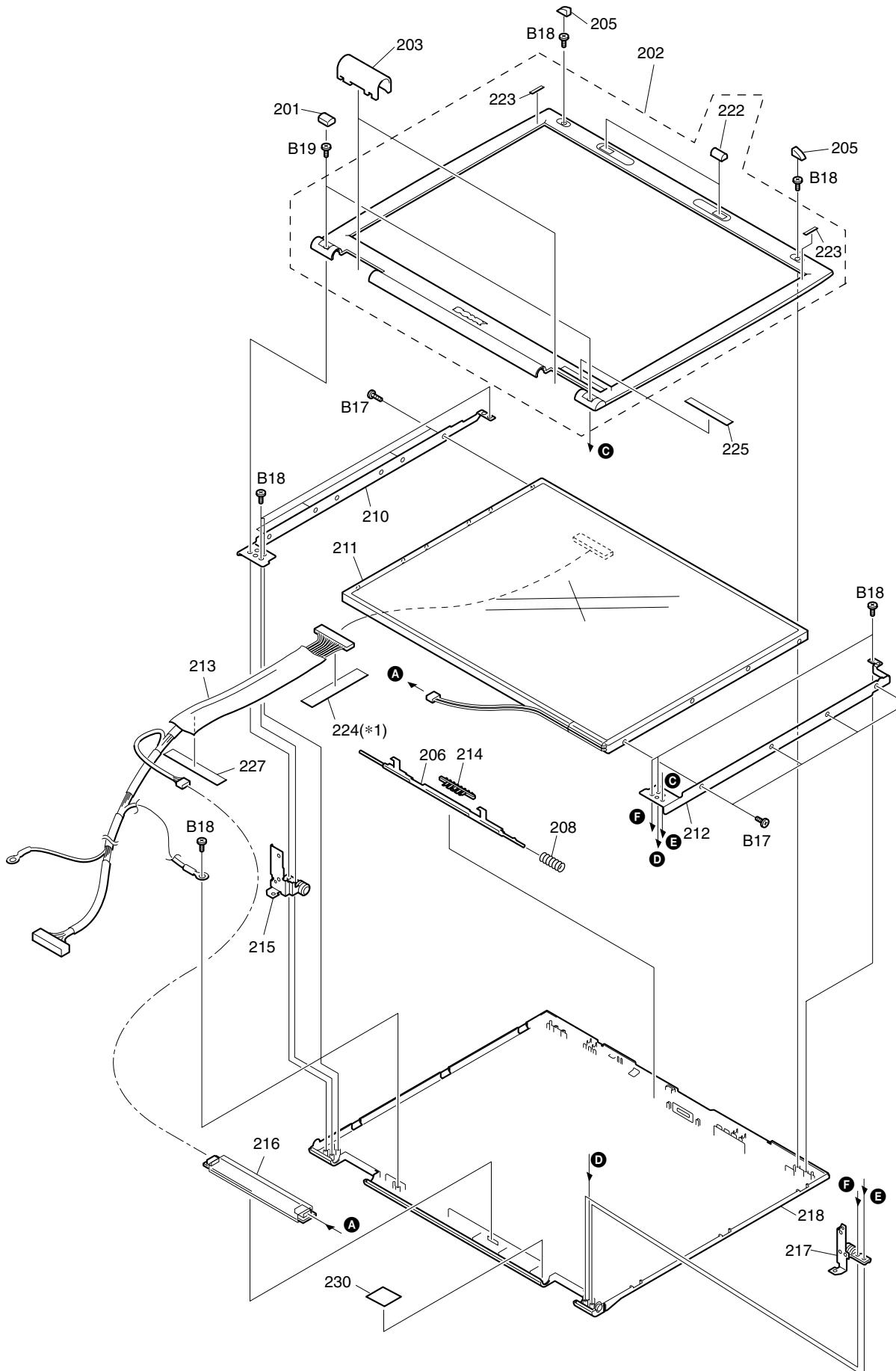
*2 When removing "HEAT SINK ASSY", a JIG is required.
For more information, refer to "Dessembly & Assembly Guide".

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*3 By referring to “[How to identify the So and Pa types of parts] (page 3-1), use the So type parts when replacing the So type optical drive, and use the Pa type parts when replacing the Pa type optical drive.

3-2. LCD Section – Made by HI–



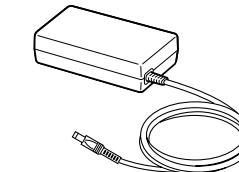
Ref. No.	Part No.	Description
201	4-672-197-01	COVER SCREW LOWER
202	X-4625-682-1	HOUSING (BEZEL 15) ASSY
203	4-667-073-01	COVER HINGE
205	4-672-198-01	COVER SCREW UPPER
206	4-670-669-01	LATCH HONTAI
208	4-672-199-01	SPRING (LATCH), COMPRESSION
* 210	4-671-115-01	BRACKET LCD 15 (L)
211	A-8067-507-A	ASSY LCD 15HI AP2 (S)
* 212	4-671-114-01	BRACKET LCD 15 (R)
213	1-961-757-13	LCD HARNESS
214	4-670-668-01	LATCH BUTTON
215	X-4625-677-1	HINGE (LEFT)
216	1-476-316-31	INVERTER UNIT
217	X-4625-678-1	HINGE (RIGHT)
218	X-4625-679-1	HOUSING (DISPLAY 15) ASSY
222	4-672-202-01	CUSHION LATCH
223	4-672-201-01	CUSHION BEZEL
224	_____	FILAMENT TAPE (W19X50) (*1)
225	4-671-967-01	(GRZ630)...LABEL (ID) (U) (C)
225	4-672-243-01	(GRZ660)...LABEL ID (U)
225	4-671-967-11	(GRZ610)...LABEL (ID) (U) (C)
227	4-672-403-01	COPPER TAPE LCD ED
230	4-673-316-01	GT2 CUSHION WL CABLE
B17	4-641-726-81	SCREW (M2), SPECIAL HEAD
B18	4-641-726-61	SCREW (M2), SPECIAL HEAD
B19	4-664-453-21	SCREW (M2X4), SPECIAL HEAD

*1 Use the FILAMENT TAPE.

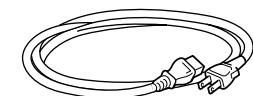
Ref. No.	Part No.	Description
		ACCESSORIES

△ 801	1-477-206-32	ADAPTOR, AC
802	A-8112-427-A	BP2NX SNT(U) ASSY(S)
△ 803	1-757-562-21	CORD, POWER
804	4-653-768-02	WEIGHT SAVER
	4-672-167-01	(Refer to page 3-3.)
	4-673-227-01	QUICK START
	(GRZ610/GRZ630) ...	
	4-673-022-01	SPECIFICATIONS SHEET
	(GRZ660) ...	SPECIFICATIONS SHEET

801
AC Adaptor (1)



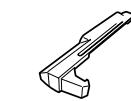
803
Power Cord (1)



802
Battery Pack (1)



804
Weight Saver (1)



The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE :

Set the DIP switch on the MBX-75 board (Main board) to match with the LCD that is used in this computer.

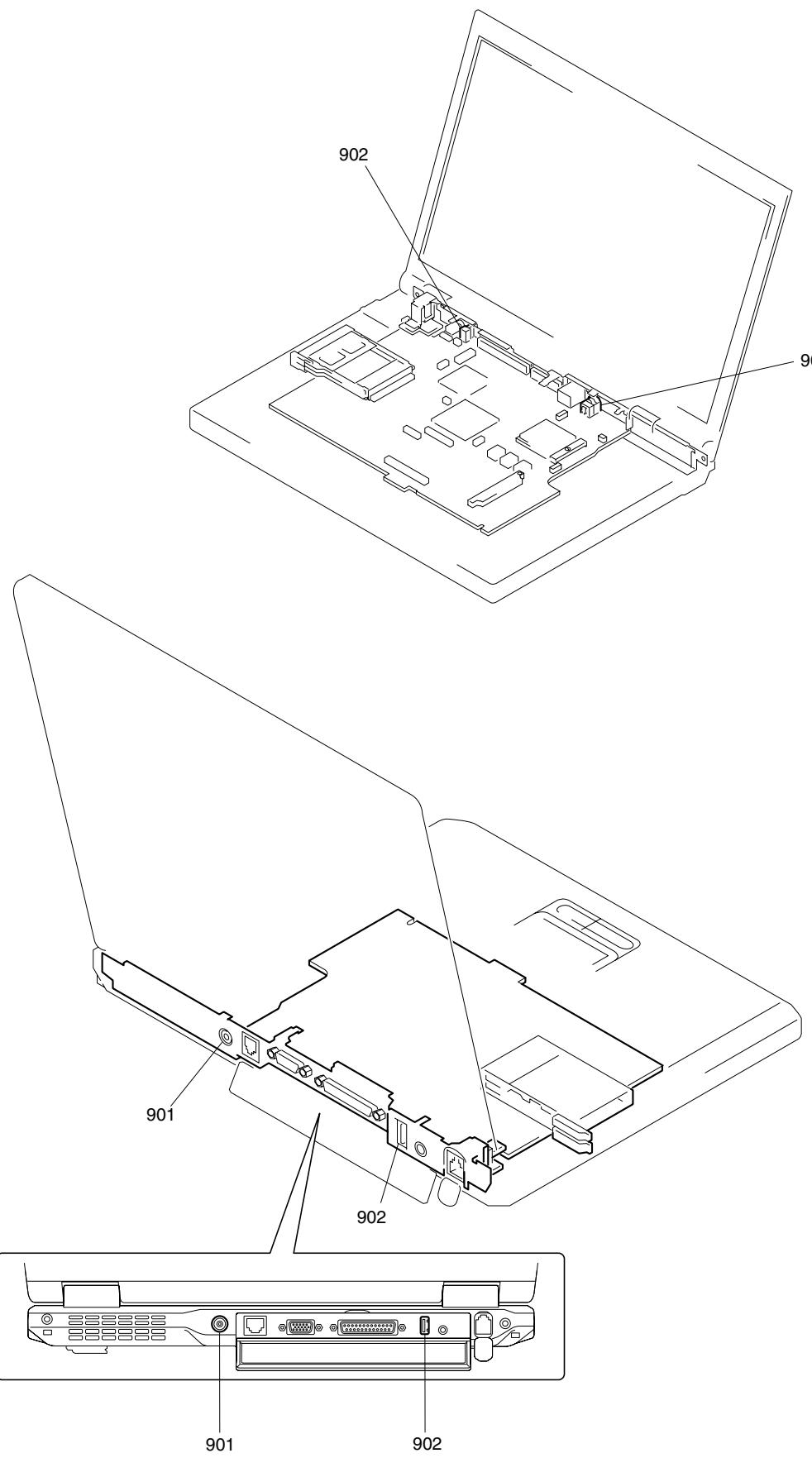


The upper position where ON indication is shown is the ON position. The lower position is the OFF position.

No.	1	2	3	4	5	6	7	8
ON/OFF	0	0	1	1	0	1	1	1

0 : ON 1: OFF

3-3. Connector Section (CH Type only)



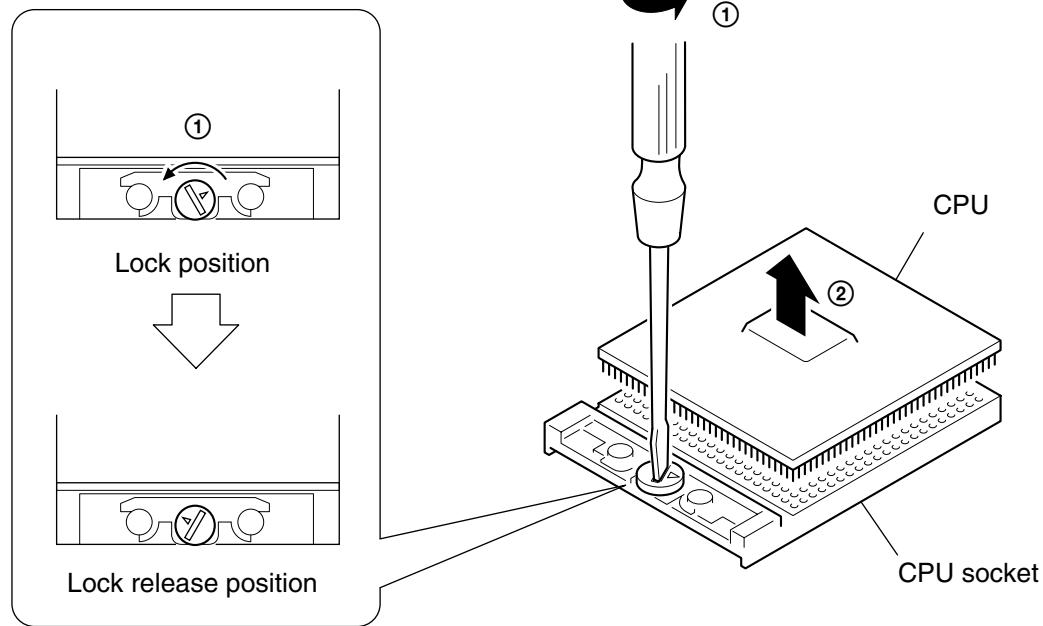
Ref. No.	Fig.	Part No.	Description
901		1-817-023-11	[CH] ...CONNECTOR, USB USB connector
902		1-779-745-21	[CH] ...JACK, DC DC IN connector
903		X-4625-501-1	[CH] ...BRACKET IO ASSY I/O Bracket

* Among the parts that are used on the boards of this model, only the connectors that are show in the list can be replaced.
(The parts other that the specified connectors cannot be replaced.)

4-1. Replacing the CPU

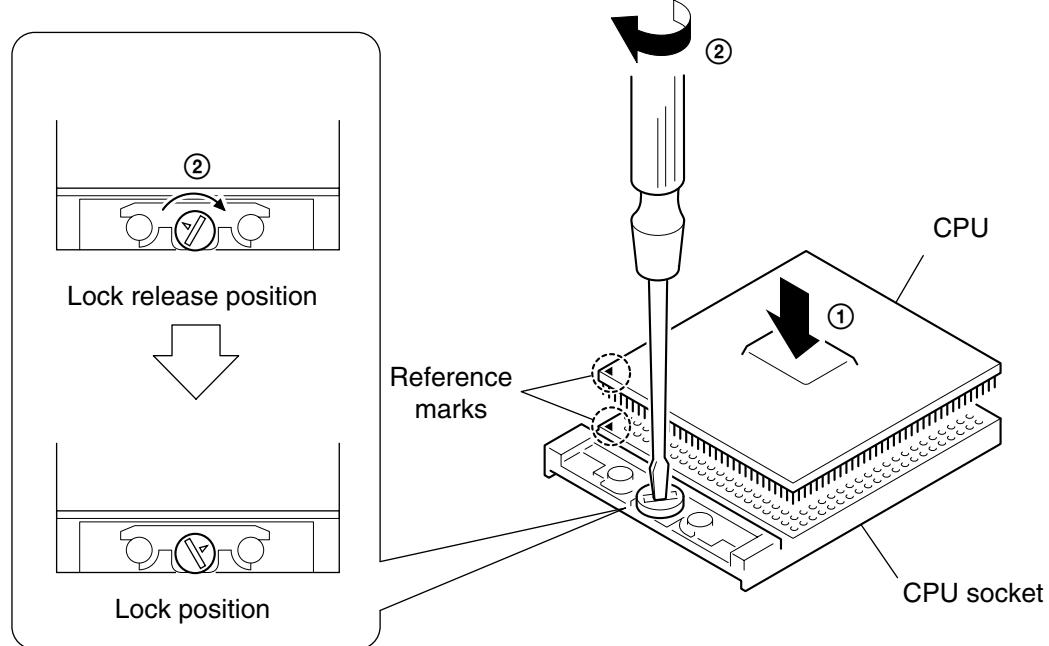
1. Removing the CPU

- ① Insert a flat-blade screwdriver into the notch as shown in the illustration and rotate it so that the protrusion comes to the lock release position.
- ② Pull the CPU gently upward to lift it out of the CPU socket.



2. Installing the CPU

- ① Align the triangle reference mark of the CPU with that of the CPU socket and insert all the pins of the CPU to the corresponding holes of the CPU socket.
- ② Insert a flat-blade screwdriver into the notch as shown in the illustration and rotate it so that the protrusion comes to the lock position.



NOTE:

Rotate a flat-blade screwdriver to the lock position securely. If not, the operation of the CPU may become unstable.

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List of PCG-GRZ Series (As of February, 2004)

Model Name	Service Manual Part No.
PCG-GRZ530	9-876-035-XX
PCG-GRZ660	
PCG-GRZ630	9-876-068-XX
PCG-GRZ610	
PCG-GRZ270	9-876-070-XX
PCG-GRZ230	

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Revision History

Suffix	Ver.	Date	Contents	QM No.
-01	Ver. 1	2003.01.27	First Edition	
-02	Ver. 2	2003.01.28	Front Page (Model Line Up), Page 3-1, Page 3-2, Page 3-6, Back Cover	N2003_008AK
-03	Ver. 3	2004.02.27	 Front Page, Page 3-2, Page 3-4, Back Cover	N2004_026CK
< Remarks >				